

PC-0040 US

<110> Preeti Lal
Jennifer Hillman

<120> DIAGNOSTIC MARKER FOR CANCERS

<130> PC-0040 US

<140> To Be Assigned

<141> Herewith

<160> 14

<170> PERL Program

<210> 1

<211> 340

<212> PRT

<213> Homo sapiens

<220>

<221> misc_feature

<223> Incyte ID No: 1573677CD1

<400> 1

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Leu | Arg | Gly | Leu | Leu | Gln | Gly | Thr | Leu | Arg | Phe | His | Thr |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ser | Pro | Pro | Thr | Asp | Ser | Ser | Val | Thr | Glu | Thr | Ile | Ile | Leu | Cys |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Thr | Met | Leu | Phe | Leu | Gly | Ser | Leu | Gly | Ala | Trp | Gly | Thr | Thr | Ser |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Ile | Ser | Thr | Gly | Ser | Ile | Phe | Ser | Leu | Lys | Thr | Leu | Arg | Ser | Gln |
| | | | | 50 | | | | | 55 | | | | | 60 |
| His | Gly | Gly | Gln | Val | Gly | Leu | Lys | Val | Ser | Arg | Pro | Arg | Ala | Gln |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Pro | Leu | Pro | Ala | Gln | Pro | Pro | Ala | Leu | Ala | Gln | Pro | Gln | Tyr | Gln |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ser | Pro | Gln | Gln | Pro | Pro | Gln | Thr | Arg | Trp | Val | Ala | Pro | Arg | Asn |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Arg | Asn | Ala | Ala | Phe | Gly | Gln | Ser | Gly | Gly | Ala | Gly | Ser | Asp | Ser |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Asn | Ser | Pro | Gly | Asn | Val | Gln | Pro | Asn | Ser | Ala | Pro | Ser | Val | Glu |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Ser | His | Pro | Val | Leu | Glu | Lys | Leu | Lys | Ala | Ala | His | Ser | Tyr | Asn |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Pro | Lys | Glu | Phe | Glu | Trp | Asn | Leu | Lys | Ser | Gly | Arg | Val | Phe | Ile |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Ile | Lys | Ser | Tyr | Ser | Glu | Asp | Asp | Ile | His | Arg | Ser | Ile | Lys | Tyr |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Ser | Ile | Trp | Cys | Ser | Thr | Glu | His | Gly | Asn | Lys | Arg | Leu | Asp | Ser |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Ala | Phe | Arg | Cys | Met | Ser | Ser | Lys | Gly | Pro | Val | Tyr | Leu | Leu | Phe |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Ser | Val | Asn | Gly | Ser | Gly | His | Phe | Cys | Gly | Val | Ala | Glu | Met | Lys |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Ser | Pro | Val | Asp | Tyr | Gly | Thr | Ser | Ala | Gly | Val | Trp | Ser | Gln | Asp |

09877633-060801

PC-0040 US

| | | | | | |
|-----------------|---------------------|---------------------|-----|--|-----|
| | 230 | | 235 | | 240 |
| Lys Trp Lys Gly | Lys Phe Asp Val Gln | Trp Ile Phe Val Lys | Asp | | |
| | 245 | | 250 | | 255 |
| Val Pro Asn Asn | Gln Leu Arg His Ile | Arg Leu Glu Asn Asn | Asp | | |
| | 260 | | 265 | | 270 |
| Asn Lys Pro Val | Thr Asn Ser Arg Asp | Thr Gln Glu Val Pro | Leu | | |
| | 275 | | 280 | | 285 |
| Glu Lys Ala Lys | Gln Val Leu Lys Ile | Ile Ser Ser Tyr Lys | His | | |
| | 290 | | 295 | | 300 |
| Thr Thr Ser Ile | Phe Asp Asp Phe Ala | His Tyr Glu Lys Arg | Gln | | |
| | 305 | | 310 | | 315 |
| Arg Arg Arg Arg | Trp Cys Ala Arg Asn | Gly Arg Val Glu Thr | Asn | | |
| | 320 | | 325 | | 330 |
| Asn Glu Gly Glu | Pro Val Ser Tyr Met | Phe | | | |
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<210> 2

<211> 2028

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<223> Incyte ID No: 1573677CB1

<400> 2

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| acaatgactt | tgagccctac | cttactggac | agtcaaatca | gagtaacagt | taccctcaa | 120 |
| tgagcgaccc | ctacctgtcc | agctattacc | cgccgtccat | tggatttcct | tactccctca | 180 |
| atgaggctcc | gtggtctact | gcaggggacc | ctccgattcc | atacctcacc | acctacggac | 240 |
| agctcagtaa | cggagaccat | cattttatgc | acgatgctgt | ttttgggcag | cctggggggcc | 300 |
| tggggaacaa | catctatcag | cacaggttca | atttttccc | tgaaaaccct | gcgttctcag | 360 |
| catgggggac | aagtgggtct | caaggtcagc | agaccagag | ctcagcctct | cccagcacag | 420 |
| ccccagctt | tggctcaacc | gcagtatcag | agccctcagc | agccaccca | gaccgcgtgg | 480 |
| gttgcaccc | gcaacagaaa | cgcggcgttt | gggcagagcg | gaggggctgg | cagcgatagc | 540 |
| aactctcctg | gaaacgtcca | gcctaattct | gccccagcg | tcgaatccca | ccccgtcctt | 600 |
| gaaaaactga | aggctgctca | cagctacaac | ccgaaagagt | ttgagtggaa | tctgaaaagc | 660 |
| gggcgtgtgt | tcatcatcaa | gagctactct | gaggacgaca | tccaccgctc | cattaagtac | 720 |
| tccatctggt | gtagcacaga | gcacggcaac | aagcgcttgg | acagcgctt | ccgctgcatg | 780 |
| agcagcaagg | ggcccgctca | cctgctcttc | agcgctcaatg | ggagtgggca | ttttgtggg | 840 |
| gtggccgaga | tgaagtcccc | cgtggactac | ggcaccagt | ccgggggtctg | gtctcaggac | 900 |
| aagtgggaagg | ggaagtgtga | tgtccagtgg | atttttgtta | aggatgtacc | caataaccag | 960 |
| ctccggcaca | tcaggctgga | gaataacgac | aacaaaccgg | tcacaaactc | ccgggacacc | 1020 |
| caggaggtgc | ccttagaaaa | agccaagcaa | gtgctgaaaa | ttatcagttc | ctacaagcac | 1080 |
| acaacctcca | tcttcgacga | ctttgctcac | tacgagaagc | gccagaggag | gaggaggtgg | 1140 |
| tgcgcaagga | acggcagagt | cgaacaaaac | aatgagggcg | aaccagtttc | ttacatgttc | 1200 |
| taacgtttga | ctttgaaaac | agtttaaaac | acgtgtgctt | ggtcagctcc | agtgtgtcgt | 1260 |
| cccgtgcggg | ggttgagtgt | tgcactcttg | cctttcttgt | cgttgatttt | tgcccagatg | 1320 |
| gatctgcatt | tatttgtact | ttttctatgt | attataatcc | tgtagaagtc | actaataaag | 1380 |
| gagtattttt | ttttgtcagc | ttatcaatca | gactgatcta | atgtgaaatg | taagtatcct | 1440 |
| taaaaacaaa | gcattctatt | tggcagaaat | tgtgttctta | aattcagtca | tttgatattc | 1500 |
| tgtgagactt | catattttct | atccctttat | tgctttttag | caaacataag | aaaccatgag | 1560 |
| tcattttgtc | atttagagta | ttctgataaa | atctcttgaa | aatactgaaa | tcaaaaggtt | 1620 |
| aatgattttt | tgttcattct | gatttgtcat | tttattatct | gttatcggtc | taaagtgcta | 1680 |
| atttaccat | ttgatttttc | tgctagacag | ataactttta | atttttcaaa | tttggcagac | 1740 |
| actttttttt | tttttttgaa | aatctttcct | tccagatctg | ttgccactg | aacagccacc | 1800 |

09877633-060601

PC-0040 US

cgccccacac tgtccctggtg tccgattggg ctggatgggt ttggggcatg atgtgtggag 1860
gaactggaag gtgcttttagg tctggttcag ggccgggcat tctttgttgt ttgcacatct 1920
ttttaaattt tacacctttt cttaagaatt ctaatgccgt cttaagtttt tataccaata 1980
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<210> 3
<211> 403
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: 228382R6

<220>
<221> unsure
<222> 20
<223> a, t, c, g, or other

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ttgtcgttga tttttgcca gatggatctg catttatttg tactttttct atgtattata 180
atcctgtaga agtcactaat aaaggagtat ttttttttgt cagcttatca atcagactga 240
tctaattgtga aatgtaagta tccttaaaaa caaagcatct attttggcag aaattgtgtt 300
cttaaattca gtcatttgat attctgtgag acttcatatt tctcatccct tattgctttt 360
tagcaaacat aagaaaccat gagtcatttt gtcattttaga gat 403

<210> 4
<211> 396
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: 1854560F6

<400> 4
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catccaccgc tccattaagt actccatctg gtgtagcaca gagcacggca acaagcgctt 120
ggacagcgcc ttccgctgca tgagcagcaa ggggccgctc tacctgctct tcagcgtcaa 180
tgaggagtggg cattttttgtg ggggtggcga gatgaagtc cccgtggact acggcaccag 240
tgccgggggtc tgggtctcagg acaagtggaa ggggaagttt gatgtccagt ggattttttgt 300
taaggatgta cccaataacc agtcccgga catcaggctg gagaataacg acaacaaacc 360
gtccacaaa ctcccgggac acccaggagg tgccct 396

<210> 5
<211> 622
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<223> Incyte ID No: 040360R1

<220>

09877633-060001

PC-0040 US

<221> unsure

<222> 430, 447, 465, 469, 492, 513, 539, 546, 556, 573, 586

<223> a, t, c, g, or other

<400> 5

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ataagaaacc atgagtcatt ttgtcattta gagtattctg ataaaatctc ttgaaaatac 120
tgaaatcaaa aggttaatga ttttttggtc attctgattt gtcattttat tatctgttat 180
cggctctaaag tgctaattta cccatttgat ttttctgcta gacagataac ttttaatttt 240
tcaaatttgg cagacacttt tttttttttt tgaaaatctt tccttccaga tctgttgccc 300
actgaacagc caccggtccc tcactgtcct ggtgtccgat tgggctggat ggtgttgggg 360
catgatgtgt ggaggaacgg aaggtgcttt aggtctgggt cagggctcggg catctttggt 420
gtttgcacan tttttaaaatt tacaacnttt cttaaggaat ctaangccng cttaaggttt 480
taaacccata angctgagcc ttaagggtag ggnccctggag gacagacaag tggatgggng 540
aaggcngctt ggtggnaaat caacgggggg gcnaaatttt ttcccntgga tgggaaaaac 600
caaaccaaac ctttttttgg ag 622
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<210> 6

<211> 902

<212> DNA

<213> Homo sapiens

<220>

<221> misc_feature

<223> Incyte ID No: 065573R1

<220>

<221> unsure

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<223> a, t, c, g, or other

<400> 6

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agacccagag ctacagcctct cccagcacag cccccagctt tggctcaacc gcagtatcag 120
agccctcagc agccacccca gaccgctgg gttgccccac gcaacagaaa cgcggcgttt 180
gggcagagcg gaggggctgg cagcgatagc aactctcctg gaaacgtcca gcctaattct 240
gccccagcg tcgaatccca cccgctcctt gaaaaactga aggtctgctc cagctacaac 300
ccgaaagagt ttgagtggaa tctgaaaagc gggcgtgtgt tcatcatcaa gagctactct 360
gaggacgaca tccaccgntc cattaagtac tccatctggt gtagcacaga gcacggcaac 420
aagcggctgg gacancggct tncgctgcat gaggagcaaa ggggcccgtc ttanctgctt 480
tttagngtc aaatggggag ttnggcattt tttttggggg tnggcccag gatgnaagnt 540
tccccngtn gggacttaag gggaaaccaa ttgcccgggg gtnccttgggt cttnaaggga 600
cnaaaattng gaagggggga aaggttttna atgtcccaan tggggatttt tttgnttnaa 660
agggntttnt anccccaaat taanccaagn ttccnngna aaaaaataag gnttttnggg 720
gaattnaang ggnaaaaaaa aaaccgggtt naaaaaaann ttcccggggg caaaccagc 780
ggggggtnc ccttttngga aaaaggccaa aggaaaantn nttaaaaatt tttaaggttc 840
ntaaaaagga naaaaaancn tcnanttttt ngnggggttt ttnttaaatt nggggggggg 900
cc 902
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<210> 7

<211> 546

<212> DNA

<213> Homo sapiens

09677637.060801

PC-0040 US

<220>
<221> misc_feature
<223> Incyte ID No: 1456688F1

<220>
<221> unsure
<222> 311, 425, 457, 513, 518, 522, 524, 527, 533, 535-538, 541, 544
<223> a, t, c, g, or other

<400> 7
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tggtagtaca gacagtgtga tggatgatgc tgctggttgt aaatttcata gtgtgtgtct 120
aatttttttt cctgttgaat gggtaaaaac aaaacaaaac tttttttaga agatgaattt 180
gctgtcatgt tttgtggaat gagggaccgt tgagctcact accacctgga gtttgagttg 240
aagcatgaaa atgggtgcca tgccgtgacgc tccagcgcct ggatctgcac gtgcccttgt 300
agaggatcct naccgtccta gagagcagac gctttctgaa aactacttgc tccaaaagac 360
cctctgagtt aacgtttcag ctgtatcatt agacttgtat ttagagcgtg tcaacttcctc 420
tgaanctgtt actgcctgaa tggagtcctg gacgacnatt gggttttttc ctctaggaga 480
atacaaacct taataaacia tactatttag canaaaanaa angnggnagt ganannngt 540
nganaa 546

<210> 8
<211> 634
<212> DNA
<213> Homo sapiens

<220>
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<223> Incyte ID No: 1573677X13

<220>
<221> unsure
<222> 500, 566, 569
<223> a, t, c, g, or other

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acaatgactt tgagccctac cttactggac agtcaaatca gagtaacagt taccctcaa 120
tgagcgaccc ctacctgtcc agctattacc cgccgtccat tggatttcct tactcctca 180
atgaggctcc gtggtctact gcaggggacc ctccgattcc atacctcacc acctacggac 240
agctcagtaa cggagacat ctttttatgc acgatgctgt ttttgggcag cctgggggcc 300
tggggaacia catctatcag cacaggttca attttttccc tgaaaaccct gcgttctcag 360
catgggggac aagtgggtct caaggtcagc agaccagag ctccgcgtat gggagcagct 420
acacctaccc cccgagctcc ctgggtggca cgggtggtga tgggcagcca gggctttcac 480
agcgacaccc tcagcaaggn ccccgggat gaacagcctg gagcagggca tgggtggcct 540
gaagattggg gacgtcagct gcctcngcng tcaagacgtg ggctctgtct cagcagcgtg 600
gcactgactg gtgtcttttc tggcaacggt ggga 634

<210> 9
<211> 598
<212> DNA
<213> Canis familiaris

<220>
<221> misc_feature
<223> Incyte ID No: 702758636H1 (Dog)

SECRET

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| ccgtggagtc | ccacccggtt | cttgaaaaac | tgaaagctgc | ccacagctat | aaccctaaag | 120 |
| agtttgattg | gaatcttaaa | agtggacgcg | tgttcataat | aaaaagctac | tctgaggacg | 180 |
| acatccaccg | ctccattaag | tactccatct | ggtgcagcac | agagcacggc | aacaagcgcc | 240 |
| tggatggggc | atttcgcgct | gcgagcagca | aggggcctgt | gtacctgctc | ttcagcgtca | 300 |
| acgggagtg | gcacttctgc | ggggtggctg | agatgaagtc | accctgggac | tacggcacaa | 360 |
| gcgctggcgt | ctggctctcag | gacaagtgga | aaggcaagtt | tgacgtgaag | tggattttttg | 420 |
| tgaaggacgt | gcccaataac | cagctccggc | acatcaggct | ggagaataat | gacaacaagc | 480 |
| cggtcaccaa | ctcccgcgac | acccaggagg | tgcccttaga | aaaagcaaa | caagtcgtga | 540 |
| aaattatcgc | ttcctacaag | cacacaacct | ccatctttga | cgacttttct | cactatga | 598 |

<211> 1792

<213> Mus musculus

<221> misc feature

<223> Incyte ID No: 034237_Mm.1 (Mouse)

| | | | | | | |
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| ctggtgtagt | actgaacacg | gcaacaagcg | cctggacggc | gccttcgcgt | ccatgagcag | 120 |
| caaggggcct | gtttatctcc | tcttcagtg | caatgggagt | ggacatttct | gtgggggtggc | 180 |
| agagatgaag | tccctgtgg | actacggcac | cagcgtggg | gtctggtctc | aggacaagtg | 240 |
| gaagggaaa | tttgatgtga | agtggatttt | tgtgaaggat | gtgcccaca | accagctgcg | 300 |
| gcacatcaga | ctggagaata | acgacaaca | acctgtcaca | aactcccgtg | atacacagga | 360 |
| ggtgccctta | gaaaaagcaa | aacaagtgt | gaagattatc | gcttcctata | agcacacaac | 420 |
| ctctatcttt | gacgactttt | ctcattatga | gaagcgccag | gaggaagagg | aggtggtgcg | 480 |
| taaggaaa | cagaatcgaa | acaaacaata | agaacaagcc | agtttgtttt | tggttaatgg | 540 |
| ttgactttga | aaacagagtt | ttaaagctgt | atgcttggtg | ctgtctccga | gtcagctcca | 600 |
| gtgtcgtcct | cgtgcgggg | tgattgttgc | atctttatct | ttgtagttca | tttttgccag | 660 |
| atggatctgc | attcattttg | atctttctat | gtattataat | attgtagaac | tcactaataa | 720 |
| aggagatttc | tgtttgtcag | cttatcagtc | agattgacct | aatgcacaaa | ataaatattc | 780 |
| ttcaaaaaca | aacacctaat | acatcccaaa | gatattttta | ttttggcaga | aattatgtct | 840 |
| tattcttata | tctagccatt | taatatccct | ataggatatt | tcataattct | tgtcctctcc | 900 |
| tgttttacag | caaacaaaaa | gccatttcag | catgtgctgt | tgatgtctct | tcacagtact | 960 |
| gaagtggctt | gcattttact | atctgtggta | tccatcatat | tgctgacctg | cccttttgag | 1020 |
| tttccacta | gacaaataac | ttttagtttt | aagtgtgctc | acagctgtct | atgggcaagc | 1080 |
| tgtccatagt | ttagtccca | cacagagcgg | tgctccagtt | ctccttgcca | ccgtctgcca | 1140 |
| ctgcagcagg | tttgggctct | gtggcaagga | actagaaggt | gttttaagtc | tggttcagct | 1200 |
| ttgcgacatt | cttagtttgt | cgtagatcat | ttttagttgt | cctctttctt | ctctagagaa | 1260 |
| tctgatgct | gtcttaagtt | tttataccag | taacgctaag | ctttaattgt | aggaactgta | 1320 |
| tagtacaggc | agtgtgatgg | atgctgctgc | cgactgtaaa | tttactgtg | tgtctatttt | 1380 |
| ttttttctgt | tgaatgggtg | aaaaaagcaa | aaaaacaaaa | aatcctttag | aaaacaaatt | 1440 |
| tgctatcatg | ttttgtggaa | tgaggagcct | cggaggagct | caccgccatc | tggagttgga | 1500 |
| gttttagcatg | aaagtgggtg | tcatgcccg | cgccctcgca | tactgaatct | gcacgcgcc | 1560 |
| actgtagagg | atctttactg | tcttagagag | cagatacctt | ccgaaactat | ttactccaaa | 1620 |
| agacctctgt | agtttaacat | taagctgtat | tatttagact | tgtatttaga | acgtgtcact | 1680 |
| tctcgagct | gttactgcct | gtacgggagc | gtggacaaca | tcggatacct | gtcctctagg | 1740 |
| aaatacaaa | ccttaataaa | cacctgttga | gcataaaaata | ctactcctac | aa | 1792 |

<211> 641

<212> DNA

PC-0040 US

<213> Rattus norvegicus

<220>

<221> misc_feature

<223> Incyte ID No: 702482342T1 (Rat)

<400> 11

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accggcttgt ccttattgtt tgtttcgatt ctgcctttcc ttgcgcacta cctcctctgc 180
ctcctggcgc ttctcataat gagaaaagtc gtcaaagatg gaggttgtgt gcttatagga 240
ggcaataatc ttcagcactt gttttgcttt ttctaagggc acctcctgcg tgtcacggga 300
gtttgtgaca ggcttggtgt cgttattctc cagtctgatg tgccgcagtt gattattggg 360
cacatccttg acaaaaatcc acttcacatc aaacttcccc ttccacttgt cctgagacca 420
gaccccgaga ctggtgccgt agtccacagg ggacttcatt tctgccaccc cacagaaatg 480
tccactccca ttgacactga agagcagata aacaggcccc ttgctgctca tggagcggaa 540
ggcgccatcc caggcgcttt gttgccatgt tccagtacta caccagatgg agtacttgat 600
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<210> 12

<211> 559

<212> PRT

<213> Homo sapiens

<220>

<221> misc_feature

<223> Incyte ID No: g12711367

<400> 12

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Asn Lys Val Gln Asn Gly Ser Leu His Gln Lys Asp Thr Val His
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Asp Asn Asp Phe Glu Pro Tyr Leu Thr Gly Gln Ser Asn Gln Ser
 35          40          45
Asn Ser Tyr Pro Ser Met Ser Asp Pro Tyr Leu Ser Ser Tyr Tyr
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Pro Pro Ser Ile Gly Phe Pro Tyr Ser Leu Asn Glu Ala Pro Trp
 65          70          75
Ser Thr Ala Gly Asp Pro Pro Ile Pro Tyr Leu Thr Thr Tyr Gly
 80          85          90
Gln Leu Ser Asn Gly Asp His His Phe Met His Asp Ala Val Phe
 95          100         105
Gly Gln Pro Gly Gly Leu Gly Asn Asn Ile Tyr Gln His Arg Phe
110          115         120
Asn Phe Phe Pro Glu Asn Pro Ala Phe Ser Ala Trp Gly Thr Ser
125          130         135
Gly Ser Gln Gly Gln Gln Thr Gln Ser Ser Ala Tyr Gly Ser Ser
140          145         150
Tyr Thr Tyr Pro Pro Ser Ser Leu Gly Gly Thr Val Val Asp Gly
155          160         165
Gln Pro Gly Phe His Ser Asp Thr Leu Ser Lys Ala Pro Gly Met
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Asn Ser Leu Glu Gln Gly Met Val Gly Leu Lys Ile Gly Asp Val
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Ser Ser Ser Ala Val Lys Thr Val Gly Ser Val Val Ser Ser Val
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09877633-060801

PC-0040 US

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| Ala | Leu | Thr | Gly | Val | Leu | Ser | Gly | Asn | Gly | Gly | Thr | Asn | Val | Asn | 200 | 205 | 210 |
| Met | Pro | Val | Ser | Lys | Pro | Thr | Ser | Trp | Ala | Ala | Ile | Ala | Ser | Lys | 215 | 220 | 225 |
| Pro | Ala | Lys | Pro | Gln | Pro | Lys | Met | Lys | Thr | Lys | Ser | Gly | Pro | Val | 230 | 235 | 240 |
| Met | Gly | Gly | Gly | Leu | Pro | Pro | Pro | Pro | Ile | Lys | His | Asn | Met | Asp | 245 | 250 | 255 |
| Ile | Gly | Thr | Trp | Asp | Asn | Lys | Gly | Pro | Val | Pro | Lys | Ala | Pro | Val | 260 | 265 | 270 |
| Pro | Gln | Gln | Ala | Pro | Ser | Pro | Gln | Ala | Ala | Pro | Gln | Pro | Gln | Gln | 275 | 280 | 285 |
| Val | Ala | Gln | Pro | Leu | Pro | Ala | Gln | Pro | Pro | Ala | Leu | Ala | Gln | Pro | 290 | 295 | 300 |
| Gln | Tyr | Gln | Ser | Pro | Gln | Gln | Pro | Pro | Gln | Thr | Arg | Trp | Val | Ala | 305 | 310 | 315 |
| Pro | Arg | Asn | Arg | Asn | Ala | Ala | Phe | Gly | Gln | Ser | Gly | Gly | Ala | Gly | 320 | 325 | 330 |
| Ser | Asp | Ser | Asn | Ser | Pro | Gly | Asn | Val | Gln | Pro | Asn | Ser | Ala | Pro | 335 | 340 | 345 |
| Ser | Val | Glu | Ser | His | Pro | Val | Leu | Glu | Lys | Leu | Lys | Ala | Ala | His | 350 | 355 | 360 |
| Ser | Tyr | Asn | Pro | Lys | Glu | Phe | Glu | Trp | Asn | Leu | Lys | Ser | Gly | Arg | 365 | 370 | 375 |
| Val | Phe | Ile | Ile | Lys | Ser | Tyr | Ser | Glu | Asp | Asp | Ile | His | Arg | Ser | 380 | 385 | 390 |
| Ile | Lys | Tyr | Ser | Ile | Trp | Cys | Ser | Thr | Glu | His | Gly | Asn | Lys | Arg | 395 | 400 | 405 |
| Leu | Asp | Ser | Ala | Phe | Arg | Cys | Met | Ser | Ser | Lys | Gly | Pro | Val | Tyr | 410 | 415 | 420 |
| Leu | Leu | Phe | Ser | Val | Asn | Gly | Ser | Gly | His | Phe | Cys | Gly | Val | Ala | 425 | 430 | 435 |
| Glu | Met | Lys | Ser | Pro | Val | Asp | Tyr | Gly | Thr | Ser | Ala | Gly | Val | Trp | 440 | 445 | 450 |
| Ser | Gln | Asp | Lys | Trp | Lys | Gly | Lys | Phe | Asp | Val | Gln | Trp | Ile | Phe | 455 | 460 | 465 |
| Val | Lys | Asp | Val | Pro | Asn | Asn | Gln | Leu | Arg | His | Ile | Arg | Leu | Glu | 470 | 475 | 480 |
| Asn | Asn | Asp | Asn | Lys | Pro | Val | Thr | Asn | Ser | Arg | Asp | Thr | Gln | Glu | 485 | 490 | 495 |
| Val | Pro | Leu | Glu | Lys | Ala | Lys | Gln | Val | Leu | Lys | Ile | Ile | Ser | Ser | 500 | 505 | 510 |
| Tyr | Lys | His | Thr | Thr | Ser | Ile | Phe | Asp | Asp | Phe | Ala | His | Tyr | Glu | 515 | 520 | 525 |
| Lys | Arg | Gln | Glu | Glu | Glu | Glu | Val | Val | Arg | Lys | Glu | Arg | Gln | Ser | 530 | 535 | 540 |
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| Ser | Thr | Gly | Gly | Asp | Thr | Ala | Met | Pro | Tyr | Leu | Thr | Ser | Tyr | Gly |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Gln | Leu | Ser | Asn | Gly | Glu | Pro | His | Phe | Leu | Pro | Asp | Ala | Met | Phe |
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| Gly | Phe | Asn | Phe | Phe | Pro | Ser | Gly | Ile | Asp | Phe | Ser | Ala | Trp | Gly |
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| Asn | Asn | Ser | Ser | Gln | Gly | Gln | Ser | Thr | Gln | Ser | Ser | Gly | Tyr | Ser |
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| Ser | Asn | Tyr | Ala | Tyr | Ala | Pro | Ser | Ser | Leu | Gly | Gly | Ala | Met | Ile |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Asp | Gly | Gln | Ser | Ala | Phe | Ala | Asn | Glu | Thr | Leu | Asn | Lys | Ala | Pro |
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| Gly | Met | Asn | Thr | Ile | Asp | Gln | Gly | Met | Ala | Ala | Leu | Lys | Leu | Gly |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Ser | Thr | Glu | Val | Ala | Ser | Asn | Val | Pro | Lys | Val | Val | Gly | Ser | Ala |
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| Val | Gly | Ser | Gly | Ser | Ile | Thr | Ser | Asn | Ile | Val | Ala | Ser | Asn | Ser |
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| Leu | Pro | Pro | Ala | Thr | Ile | Ala | Pro | Pro | Lys | Pro | Ala | Ser | Trp | Ala |
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| Asp | Ile | Ala | Ser | Lys | Pro | Ala | Lys | Gln | Gln | Pro | Lys | Leu | Lys | Thr |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Lys | Asn | Gly | Ile | Ala | Gly | Ser | Ser | Leu | Pro | Pro | Pro | Pro | Ile | Lys |
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| His | Asn | Met | Asp | Ile | Gly | Thr | Trp | Asp | Asn | Lys | Gly | Pro | Val | Ala |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Lys | Ala | Pro | Ser | Gln | Ala | Leu | Val | Gln | Asn | Ile | Gly | Gln | Pro | Thr |
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| | | | | 365 | | | | | 370 | | | | | 375 |
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09877633-060801

PC-0040 US

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| | | | | 395 | | | | | 400 | | | | | 405 |
| Asn | Leu | Lys | His | Gly | Arg | Val | Phe | Ile | Ile | Lys | Ser | Tyr | Ser | Glu |
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| Asp | Asp | Ile | His | Arg | Ser | Ile | Lys | Tyr | Asn | Ile | Trp | Cys | Ser | Thr |
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| Glu | His | Gly | Asn | Lys | Arg | Leu | Asp | Ala | Ala | Tyr | Arg | Ser | Met | Asn |
| | | | | 440 | | | | | 445 | | | | | 450 |
| Gly | Lys | Gly | Pro | Val | Tyr | Leu | Leu | Phe | Ser | Val | Asn | Gly | Ser | Gly |
| | | | | 455 | | | | | 460 | | | | | 465 |
| His | Phe | Cys | Gly | Val | Ala | Glu | Met | Lys | Ser | Ala | Val | Asp | Tyr | Asn |
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| Thr | Cys | Ala | Gly | Val | Trp | Ser | Gln | Asp | Lys | Trp | Lys | Gly | Arg | Phe |
| | | | | 485 | | | | | 490 | | | | | 495 |
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| Asn | Ala | Tyr | Thr | Ala | Met | Ser | Asp | Ser | Tyr | Leu | Pro | Ser | Tyr | Tyr |
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| Ser | Pro | Ser | Ile | Gly | Phe | Ser | Tyr | Ser | Leu | Gly | Glu | Ala | Ala | Trp |
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00877633-060801

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| Leu | Pro | Pro | Ala | Thr | Ile | Ala | Pro | Pro | Lys | Pro | Ala | Ser | Trp | Ala |
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| Lys | Leu | Arg | Ser | Ile | Asn | Asn | Tyr | Asn | Pro | Lys | Asp | Phe | Asp | Trp |
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| Ser | Arg | Asp | Thr | Gln | Glu | Val | Pro | Leu | Glu | Lys | Ala | Lys | Gln | Val |
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09877633-060801